Section of Psychiatry

President—Professor E. STENGEL, M.D., M.R.C.P.

Meeting
December 10, 1957

The Follow-up of Children with Tuberculous Meningitis with Special Reference to Psychiatric and Neurological Aspects [*Abstract*]

By JOHN LORBER, M.D., M.R.C.P.
Sheffield

A COMPREHENSIVE analysis of the long-term results of treatment of tuberculous meningitis was presented on the basis of 100 consecutive surviving children treated at the Department of Child Health of the University of Sheffield and who have been observed for three to ten years. Routine clinical and radiological examinations at regular intervals were supplemented by annual intelligence tests, repeated electroencephalography, and audiometry. Reports from schools were obtained and were compared with the children's previous records where applicable.

78 were free from all physical defects and 12 had considerable neurological residual lesions. The I.Q. of 7 children was 120 or more after recovery and of 6 it was less than 50. The vast majority (67) had an I.Q. of 81–110. The severely retarded children were all 2 years of age or less at the time of their meningitis. The scholastic progress of 45 was good or average, but 35 were dull. The behaviour of children with an I.Q. of 70 or over was normal in 88. Major personality disorders were present in 2. Sexual precocity occurred in three girls. In 41 children the EEG failed to return to normal, although 16 of these had no neurological or mental changes at any time. Intracranial calcification developed in 45 children.

President—ELIOT SLATER, M.D.

Meeting
October 14, 1958

Dr. ELIOT SLATER delivered his Presidential Address on **The Problems of Pathography.**

Meeting
November 11, 1958

Psychiatric Morbidity in an Urban Group Practice [*Abridged*][1]

By MICHAEL SHEPHERD, D.M., MICHAEL FISHER, M.B., LILLI STEIN, M.A., Ph.D., and W. I. N. KESSEL, M.R.C.P., D.P.M.
London

INTRODUCTION

MUCH of the work bearing on the epidemiological aspects of mental disorder has been related to patients in institutions, where the population is conveniently circumscribed for the purposes of investigation. These studies have, in consequence, been largely concerned with the major psychiatric disorders from which the patients principally suffer: the functional psychoses, the senile psychoses, the epilepsies and mental deficiency. The early studies of mental illness outside hospital were conducted in the main by investigators interested in the genetic background of the same conditions. For an adequate assessment of the nature and amount of mental illness in the community, however, there is an additional need for systematic study of the minor psychiatric disorders: the neuroses, the abnormalities of personality, the behaviour disorders and the psychophysiological disturbances. Here hospital populations have proved less useful; only a minority of the individuals

[1]Many of the data have had to be omitted and will be published elsewhere.

suffering from these disabilities require admission and though an uncertain proportion may be seen as out-patients they do not necessarily attend the hospital psychiatric departments.

Research into mental ill-health in the community has been greatly stimulated by the methods employed by public health authorities and epidemiologists in surveys of general morbidity. Attempts have been made to investigate groups of people whose experience of ill-health is readily accessible, e.g. military personnel, factory workers or members of insurance schemes. With improved techniques it has also proved possible to study more representative samples of a population, as in the well-known Eastern Health District of Baltimore. In work of this type there is one medical agent, namely the general practitioner, whose unique position between the hospital and the community renders his experience of particular value provided that it can be recorded systematically. For this reason the general practitioner's role in the study of morbidity has now gained widespread recognition in this country. Since the introduction of the National Health Service several studies of patients' needs, doctors' services and individual diseases have been undertaken by the Social Medicine Unit of the Medical Research Council, the General Register Office and the College of General Practitioners.

The bulk of this important work, however, has been concerned only indirectly with the problems in which the psychiatrist takes a special interest. At the present time a dearth of reliable quantitative information hampers the value of most activities in the field. The links between general practitioners and psychiatrists have been strengthened by the development of domiciliary consultations but there remain wide differences in general practitioners' referring habits to hospital. There is also considerable variation in the size of the general practitioner's psychiatric case-load according to the reports which have appeared from individual doctors who have analysed and commented on their own clinical experience (Watts, 1956). In Lord Taylor's opinion (Taylor, 1954) the neuroses account for 5–10% of the general practitioner's new cases; the working party of the Council of the College of General Practitioners (1958), on the other hand, refers to a "generally accepted figure . . . in the region of 30%" and some practitioners have exceeded this estimate. Part of the explanation for this diversity of opinion may lie in true differences of prevalence related to the effects of geographical and social factors or to the selection of particular doctors by their patients. It is equally apparent that the attitudes of the general practitioners and their readiness to make a psychiatric diagnosis also play a role in the identification of psychiatric cases. In his study of eight practices Logan (1953) has made this point explicitly to account for the high rate of psychiatric morbidity recorded by one of the practitioners who took special pains to make a note of psychoneurotic conditions. A third source of variation lies in the different systems of classification which have been employed.

With these factors in mind we initiated a socio-medical investigation into some of the psychiatric problems of a population defined by reference to one group practice in South-East London. Our particular interest was in the nature and amount of mental ill-health conspicuous to the practitioners during one year and no attempt was made to seek out people who did not consult them.

The Practice

The four practitioners (Dr. M. Fisher, Dr. I. Fisher, Dr. C. Benn and Dr. L. Morgan) hold eleven surgeries weekly. Two doctors in rotation are present at each surgery and two undertake the home visits. An appointment system and a secretary help to ensure that every doctor-patient contact is entered on the patient's medical record. The medical records have always been kept carefully for the purposes of administration and efficient doctoring, particularly as more than one doctor may see the same patient.

Many additional activities have been developed with the aim of providing a fully comprehensive service "from the cradle to the grave", with an increasing emphasis on preventive medicine (Chalke and Fisher, 1957). The stress laid on the patients' social background and their everyday problems has gone with an appreciation of the psychological components of illness but none of the four doctors has had special psychiatric training. Their policy has been to treat the mentally ill patient within the practice whenever possible and to request the help of psychiatric colleagues when necessary.

Method

The "population" studied was a 20% random sample of the practice list of approximately 9,000 registered patients. The illnesses were studied for one risk-year, March 1956 to February 1957. For practical reasons the sampling was done by random selection of initial letters of surnames; all patients who were registered before the risk-year and whose surnames began with one of *six* letters of the alphabet were included. For the whole 20% sample basic data on age, sex, marital state, registration in the practice, consultations, &c., were transferred from N.H.S. cards to

punch cards. The patients covered by these six letters were subdivided into a four-letter group (13⅓% of the practice) about whom medical information was obtained from the general practitioners and a two-letter group about whom the medical data were abstracted directly from the N.H.S. cards and other practice records. The medical information about the two-letter sample will not be discussed further in this paper. For a sub-section further social and demographic data were obtained by interview and questionnaire. Since most of the questionnaires were administered to patients in surgery during the summer following the risk-year this group did not constitute a random sub-sample but was weighted by patients attending surgery, particularly those with young children. It amounted to one-half of the sample and yielded additional data for persons in the whole household (including non-patients) regarding occupations, job history, housing, duration of residence in house, &c. The three units of analysis which were used for the social data were: (1) the patient —represented by the N.H.S. card; (2) the patient group—represented by one address for a group of cards; (3) the whole household—for the section covered by the questionnaire.

The medical data relate to "attenders", i.e. patients who had made at least one medical consultation in the risk-year. The unit of work analysed was the consultation. It was not considered possible to assess conspicuous psychiatric morbidity without reference to the general pattern of morbidity in the practice. Medical data were obtained therefore about every adult patient (aged 15 or over) in the four-letter sample at discussions during May to July 1957 between the general practitioners and one of us (W. I. N. K.). The N.H.S. record cards were examined and details were collected about the patients' illnesses during the year and their significant illnesses in the past. Further information about these patients for the preceding and subsequent years was abstracted directly from the record cards. The general practitioner was asked about overt psychiatric illnesses and the presence or absence of psychiatric components of other illnesses during the year (*see below*). Where there was no conspicuous psychiatric disability the practitioner was invited to comment on any abnormal features of personality.

Socio-economic Features

In view of the importance of the social correlates of ill-health it was necessary to secure social and demographic information about the population at risk. An outline of some family and socio-economic characteristics demonstrates that the sample whose morbidity was studied was not made up of an abnormal or extraordinary group of people in respect of these features.

There were 911 adults and 282 children in the four-letter sample—539 males and 654 females; over half had been in the practice since before 1949. The age composition differed somewhat from that of South-East London generally. Children under 15 formed nearly one-quarter of the sample; there was also some excess of women aged 30–44 years, but a significant deficit of single men at all ages—perhaps understandable in view of the practice's special facilities for babies and toddlers.

The average size of patient-group at one address was 2·1 patients, and over 40% of addresses had only 1 patient. In the households covered by questionnaire the average patient-group was larger, 2¾ patients; the whole household averaged 3½ persons, slightly larger than the average for England and Wales. A high proportion (nearly 60%) of the households contained children under 16 years. An indication of the stability of these families is provided by the fact that less than 2% of them had migrated into the district during the previous two years and 42% of the families had lived in the same house for ten years or longer.

The households covered by questionnaire had a higher proportion of men in social class 3 and lower proportions in classes 4 and 5 than the average for England and Wales. The occupational stability of the men is indicated by the fact that nearly one-fifth had been in the same job for fifteen years or longer. The number of earners in relation to all members of the household averaged 0·44, a figure very similar to the average for England and Wales. These earners were mainly men and single women; the married women were mostly housewives, and those who did work outside their homes were as commonly in part-time as in full-time employment.

General Morbidity (excluding Psychiatric Illness)

(1) *Consultations.*—Of the whole sample, 70% made at least 1 consultation during the year, and these attenders averaged 5¾ consultations each. Among children under 15, the attendance rate was rather higher and did not differ markedly between the sexes. Among adults, however, the percentage of men who attended (67%) was lower than that of women (75%), and the average number of consultations for male attenders (5¾) was also a little lower than for females (6½). It is interesting to note that the percentage of patients attending at least once was fairly steady in all adult age-groups but the average number of consultations for adult attenders increased with age.

There were very few significant trends of attendance in relation to social and family features. Length of time in the practice, size of patient-group and occupational class showed no association with attendance. Job duration, perhaps surprisingly, did show an association; among the men who had been in their jobs for an intermediate period of time (three to eight years) there was a significantly high percentage of attenders. For the women, marital state, child status and employment did not show any strong connexion with frequency of attendance. There was a slightly lower average of consultations for married women than for single; within the married group the housewives had fewer consultations than either the full-time or the part-time employed.

(2) *Illnesses.*—We adopted the working definition of illness proposed by Backett *et al.* (1953), namely "a disturbance of a patient's health that is reflected in at least one consultation". All illnesses were assigned to appropriate systems in the WHO International Classification of Diseases. By this method the illnesses for which the adult patients consulted their practitioners were found to be similar to those in other general practice studies. Patients with respiratory illnesses consulted the doctors most frequently; 41% of adult attenders suffered at least one such illness during the year. Locomotor disorders (31%) ranked second and abdominal illnesses (23%) third. Dermatological, ophthalmic and aural illnesses were the other large groups among both men and women. In addition, genito-urinary disorders formed a large group for women (22%), though not for men (4%). A smaller excess among women was noted for illnesses referable to the central nervous system and for overweight. Examination of the age-distribution of illnesses showed a number of trends. Skin disorders, for example, affected higher proportions of both sexes under the age of 20; abdominal illnesses were recorded most frequently among men aged 30–44; complaints of debility, for both sexes, were most frequent in the middle years of life.

The availability of four doctors went some way towards offsetting the bias of a self-selected group of patients. Comparisons of the adults consulting each of the four general practitioners, however, indicate that there was some self-selection of patients within the group practice. There were several differences in the age-sex composition of the adults who attended each doctor. The female doctors averaged a higher number of consultations for both men and women patients. Further, the morbidity pattern among patients of individual doctors displayed differences suggestive of self-selection.

Psychiatric Morbidity

To assess the prevalence of psychiatric ill-health it was necessary to arrive at operational criteria of morbidity. The use of the WHO International Classification of Diseases underestimates psychiatric morbidity since some of the illnesses classified in symptomatic terms include a proportion of psychological disorders; it is also difficult to take account of the psychiatric aspects of established physical disease with this method of classification.

Two other methods of classification were therefore employed. On the basis of predetermined criteria we allocated each illness to one of three groups. Group 1 comprised the psychoses and all illnesses where the patient couched his complaint in psychological terms. Illnesses expressed in somatic terms were divided into those in which the symptoms could not reasonably be ascribed to physical disease (group 2) and those which were consequent upon pathological changes (group 3). This classification is used here only to discuss the reasons for consultation.

The principal approach to an estimate of psychiatric morbidity was based on the general practitioner's medical judgment. Though observer error and memory factors must affect such an estimate, this judgment represents the best available knowledge of the patient and his circumstances. Prior agreement had been reached upon the criteria of psychiatric disability to be adopted. Psychosis and mental deficiency, though easily identified, are encountered infrequently in the surgery. Experience suggested that most of the other psychiatric disabilities presented in three ways. Some patients displayed psychological symptoms such as anxiety, depression, irritability or nervousness. Others had somatic symptoms which the practitioners could not explain adequately by physical illness: headache, insomnia, palpitations and menstrual disturbances were common examples. Finally there were patients whose psychological reaction to indisputable physical illness was in some way abnormal. In addition, there were a number of patients whom the general practitioners were not inclined to regard as having suffered from a psychiatric disability but whose personalities they considered to be in some way abnormal.

(1) *Prevalence rates, age and sex.*—Of the 911 adults at risk in the four-letter sample 620 attended during the year—253 men and 367 women. The general practitioners identified 86 patients, 28 men and 58 women, as having presented a conspicuous psychiatric disability. The one-year-period prevalence rate for persons with conspicuous psychiatric disability was thus 9% of all registered patients (11% for women

and 7% for men). Another 5% of registered patients were considered by the general practitioners to have displayed abnormal personality traits independent of the presenting illness. In this group also women exceeded men.

The rates for women showed some increase in middle age but there was no age trend for men. (With the WHO classification men also displayed a higher rate in middle age.) Fry (1957) reports similar findings but they differ from most hospital reports which suggest an association of neurosis with the younger age groups.

The need to specify carefully the criteria on which any estimate of psychiatric morbidity is based may be illustrated by a comparison of the different prevalence rates which could be derived from the same data. 8% of adult attenders had psychological symptoms at some time during the year. Inclusion of all patients who had had an illness without obvious physical cause would have inflated the estimate to 38%; with the addition of patients with "psychosomatic" or "stress" disorders the rate would have risen to more than 50%. This figure would still have left out those patients whose psychiatric disability was expressed as an elaboration of the symptoms of established physical disease.

(2) *Illnesses.*—Only 3 of the 86 patients with conspicuous psychiatric morbidity exhibited psychotic symptoms during the year; there were also 2 mental defectives. It was not possible to make formal psychiatric diagnoses for the remainder but anxiety characterized the largest group; hysterical reactions, depression and hypochondriacal reactions were also observed. Among these patients there was a higher prevalence of complaints loosely referable to the central nervous system—headache, giddiness, &c.—than among the generality of attenders. Otherwise the distribution of physical illnesses was the same as for all attenders except for an excess of abdominal and orthopædic illnesses among the women.

9 patients were referred to a psychiatrist during the year. They constituted 1·5% of all attending patients and 10% of the identified "psychiatric" patients. These 9 people included the 3 psychotic patients but it was not possible to elucidate the factors determining referral for the other 6 whose illnesses were similar in form to those of several patients who were not referred to hospital.

Of all patients with a definite history of psychiatric illness before the risk-year only about one-half were considered to have displayed psychiatric disability during the year. By the criteria adopted for detection, therefore, approximately one-half of their illnesses had remitted. During the subsequent year three-quarters of the "psychiatric" patients made the same complaints as in the risk-year; one-eighth of the patients either did not attend or made no consultations for the same condition that had led to their identification; no assessment could be made about the remaining eighth.

(3) *Consultations.*—62% of the consultations were with female patients, 38% with males. 71·8% of consultations were devoted to physical disease. In 6·8% of consultations the patients had psychological symptoms; 21·4% of consultations were concerned with illnesses without apparent physical cause.

The average annual number of consultations for the "psychiatric" patients was 9·7, nearly double that of the remaining patients (5·1). A high attendance rate was also recorded in the preceding and subsequent years. One-quarter of the group attended very often during the risk-year and so contributed unduly to the high average. Women (10·1) attended more frequently than men (8·8); this sex difference did not obtain for the other patients.

(4) *Social factors.*—The social factors which were measured did not distinguish patients with conspicuous psychiatric morbidity from the whole population. However, the general practitioners regarded disturbed family relationships as ætiological factors in the illnesses of 20% of these patients.

Conclusion

The social and general medical characteristics of the sample indicate that it was not composed of highly selected or unusually sick people. From the sociological standpoint they seemed to be ordinary families, stable in their homes and jobs; a high proportion had young children. Most were of the skilled working-class and had social contacts in the area and relatives near by. From the medical standpoint they seemed to come to their doctors about as often, and for the same kinds of illness, as the patients in other general practices from which findings have been published.

The one-year-period prevalence rate for adults with conspicuous psychiatric disability was 9% of the registered population; the rate for women exceeded that for men. These people attended more often than other patients but presented a similar pattern of consultations for physical disease. They were not remarkable in their social characteristics. Only 10% of patients

with conspicuous psychiatric ill-health were referred for specialist opinion.

While the findings from one group practice do not permit of generalization the available evidence does not suggest that an overestimate of conspicuous psychiatric ill-health has been provided. If it is of this order of magnitude in the community it should claim more attention from both the psychiatrist and the general practitioner.

REFERENCES

BACKETT, E. M., SHAW, L. A., and EVANS, J. C. G. (1953) *Proc. R. Soc. Med.*, **46**, 707.
CHALKE, H. D., and FISHER, M. (1957) *Lancet*, ii, 685.
Council of College of General Practitioners, Working Party Report (1958) *Brit. med. J.*, ii, 585.
FRY, J. (1957) *Brit. med. J.*, ii, 1453.
LOGAN, W. P. D. (1953) *Stud. med. Popul. Subj.*, No. 7.
TAYLOR, S. (1954) Good General Practice. London.
WATTS, C. A. H. (1956) Neuroses in General Practice. Edinburgh.

Meeting
December 9, 1958

The Role of Stress in the Ætiology of Pyschosomatic Disorders [*Abridged*]

By LINFORD REES, M.D., M.R.C.P., D.P.M.

London

Definitions

The term *stress* has a varied history and would undoubtedly be regarded by Ogden and Richards (1931) as a nomad in view of its changing meaning and usage throughout the centuries. Judging by current usage of the term it would seem that its wandering tendency has not yet ceased.

Stress, used as a noun, probably originated as an aphetic form of distress and in the fifteenth century was used to denote hardship, adversity and sometimes to describe forces or pressures applied to a person for purposes of compulsion or extortion.

In physics the term stress has a precise meaning and refers to a force which, when applied to a material, produces a change in shape which is referred to as strain. In the early nineteenth century stress was used synonymously with strain and was often used to denote strain on bodily and mental functions. Since this time the word stress has been applied to external forces or stimuli as well as to the effects of such on the organism and sometimes to the point of interaction between them.

In biology and medicine the term stress is of comparatively recent introduction and has been variously applied to external stimuli as well as their effects on the organism.

Among the current uses and applications of the word stress is that of Stewart Wolf (1950) who uses the term in a roughly similar fashion to its use in physics. He regards stress as the external stimulus or force which is strain-producing or potentially strain-producing to the person to whom it is applied. Anything may be considered a stress if it threatens the biological integrity of the organism, whether directly by its physical or chemical properties or indirectly because of its symbolic meaning. Harold Wolff (1952) uses the term stress as the internal resisting force brought into being in the organism by interaction with the environment; Selye (1957) to denote a specific syndrome occurring in the body in response to certain agents which are designated stressors.

In general medicine and psychiatry the term stress is commonly used to denote various psychosocial situations which tend to produce disorganization of behaviour, including physical and mental illnesses. Responses of different individuals to potentially stressful psychosocial situations show considerable variation. The response may be apt and adaptive or it may be inept or maladaptive, the latter sometimes taking the form of physical or mental illness. The precise relationships between the psychosocial situations which are potentially stressful and their effects on the organism on the one hand, and the various stressor agents described by Selye (1957) and their effects on the organism on the other, require further research for their elucidation.

A convenient definition of stress would be any stimulus or change in the external or internal environment which disturbs homeostasis and which, under certain conditions, can result in illness.

The terms stress and stressor are really abstractions and are only meaningful in relation to their effects on the organism and it might be better to use stress adjectivally as suggested